

REMARKS

This is in response to the Office Action dated January 8, 2007. In view of the following representations, reconsideration is respectfully requested. A clean copy of pending claims 18-34 is presented for the Examiner convenience.

In the previous Office Action, independent claims 18, 30 and 33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hawrylo (U.S. Patent No. 4,576,326). In the explanation of the rejection, the Examiner states that:

"The collet and table are heated to an appropriate temperature (col 4 lines 15-25) however the temperatures are not further disclosed. Neither is keeping heat from the heating table away of the collet or releasing the device before complete solidification."

The Examiner is correct in noting that Hawrylo does not teach anything that would prevent heat transfer to the collet, which is an important feature of the present invention, as defined in the independent claims. Note that the Hawrylo reference is primarily concerned with reducing crystalline damage to the devices (16) and lower thermal resistance for the bonds by use of a parallel burnishing method. The Hawrylo method ensures that the bonding pad surfaces are defect-free, parallel to each other and perpendicular to the pressure applied (col. 4, lines 22-25).

Further, the Examiner makes the statement that "during placement heating both to the same temperature will prevent warping." While accurate, the only source for this statement is the present invention. The Hawrylo reference does not provide any disclosure or suggestion of carrying out the pressure bonding operation so as to substantially prevent the transfer of heat from the component to the collet. In fact

Hawrylo does not even recognize the problems associated with temperature differences in the component (i.e. generation of residual stress in the component).

Dependent claims 19-21 recite specific steps, which are unsuggested in the prior art, to prevent heat being transferred. In particular, claim 19 requires heating the collet to substantially the same temperature as that of the heating table while the heating table is heated so as to prevent transfer of heat from said semiconductor laser component to said collet.

Claim 20 requires maintaining the temperature of the collet at a temperature that is higher than the temperature of the heating table until said bonding member solidifies completely.

Claim 21 requires heating the semiconductor laser component is heated to substantially the same temperature as the temperature of the collet before the semiconductor laser component is held by said collet.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (Fed. Cir. 1974). In this case, none of the express limitations of claim 19-21 are disclosed in the prior art.

Further, the Examiner, in describing the Hawrylo reference, states:

"As the heating table comprises a heatsink (12) most heat will stay below the collet and be drawn to the sink. It is unlikely that heat would flow upward to the collet when there is heatsink present and the tool has its own heat source."

However, the Hawrylo reference clearly contemplates heating bonding pad 18 with heat transferred from the heatsink to the collet. Please note, in Hawrylo, the collet

heating means is optional (see col. 3, lines 19-20). Thus, the Hawrylo pressure bonding method clearly does not prevent the transfer of heat from said semiconductor laser component to said collet.

Note that the modifying references, i.e., Powers, Kurpiela, and Laub, do not disclose or suggest the limitations that are omitted in the pressure bonding method of Hawrylo.

In view of the above, it is submitted that the present application is now clearly in condition for allowance. The Examiner therefore is requested to pass this case to issue.

In the event that the Examiner has any comments or suggestions of a nature necessary to place this case in condition for allowance, then the Examiner is requested to contact Applicant's undersigned attorney by telephone to promptly resolve any remaining matters.

Respectfully submitted,

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